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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,668	05/21/2004	Boris A. Movchan	13DV-14039-3	3667
30952	7590	04/05/2006	EXAMINER	
HARTMAN AND HARTMAN, P.C. 552 EAST 700 NORTH VAIPARAISO, IN 46383			BUEKER, RICHARD R	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 04/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/709,668	Applicant(s) MOVCHAN ET AL.	
	Examiner Richard Bueker	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-18 is/are allowed.
- 6) ☒ Claim(s) 1-3, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 19 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Venkatesan (5,015,492), who discloses an apparatus comprising a single evaporation source containing multiple different oxide compounds having differing vapor pressures (see col. 1, lines 55-66). The apparatus includes a means for suspending a substrate near the evaporation source, a means for projecting a high energy beam (laser beam) onto the evaporation source, a shutter (see 46 of Fig. 1 and col. 7, lines 37-66) which can be used to prevent a vapor cloud from the laser irradiated source from contacting the substrate to be coated, and a means for removing the shutter to allow the coating vapor to coat the substrate. The apparatus of Venkatesan has an inherent capability of being used as intended by applicants. Regarding claim 19, it is noted that the purpose of Venkatesan's charge probe 42 is to detect the portion of the lobe that contains the

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proper composition, particularly during the star-up phase of the process. See col. 7, lines 6- Also, Venkatesan's shutter is for use during the start-up phase (col. 7, lines 50-57), and is retracted when the process has been initialized and deposition is ready to proceed. Also, Venkatesan teaches at col. 7, lines 62-66, that the operation of the probe 42 and shutter 46 can desirably be automated, and it at least would have been obvious to follow this suggestion of Venkatesan by providing programmable means. Further regarding claim 19, see In re Venner, 120 USPQ 192, where it was indicated that it was obvious to provide an automatic means to replace manual activity which has accomplished the same result.

Claims 1-2 and 20 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Demaray (4,676,994), who discloses an apparatus for electron beam evaporation of a target material containing zirconia and yttria (see paragraph bridging cols. 3 and 4), wherein the apparatus can include a vapor shield or shutter for selectively covering the crucible until coating actually begins. Applicants' specification indicates that zirconia and yttria have substantially the same vapor pressure, but since they are not identical, then at least one of the oxide compounds will have a vapor pressure that is higher than the other oxide compound, and thus an apparatus that includes a yttria stabilized zirconia target with a shutter as taught by Demaray meets the limitations of claims 1 and 2. Also, Demaray teaches that the crucible should remain covered while a preliminary step of refining and reducing takes place to form a desired quantity of substoichiometric coating material. Demaray also teaches (col. 4, lines 1-5) that this step includes changes in composition

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of the vapor cloud. Therefore, the shutter moving means of Demaray is a "means responsive to changes in the vapor cloud" as recited in claim 1 as amended.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demaray (4,676,994) taken in further view of Beesley (5,849,371) and Venkatesan (5,015,492). Beesley also discloses an electron beam evaporation apparatus which has a shutter for covering the crucible during the start-up phase prior to the actual workpiece coating step. Beesley teaches that it is desirable for the shutter removing means to comprise a programmable means for automatically removing the shutter following the start-up phase. It would have been obvious to provide the removing means of Demaray with a programmable means as taught by Beesley to gain the efficiency advantages provided by automation. Regarding the claim 19 limitation of the programmable means comprising means for sensing the composition of the vapor cloud, it is noted that Demaray teaches (col. 4, lines 1-5) the step of monitoring changes in composition of the vapor cloud to determine when the start-up phase is complete. It would have been obvious to include this sensing step in a process control programming means for controlling Demaray's process. See In re Venner, 120 USPQ 192, where it was indicated that it was obvious to provide an automatic means to replace manual activity which has accomplished the same result. Also, Venkatesan has been cited for his teaching at col. 7, lines 62-66, that the start-up phase of an evaporation source can desirably be automated, and this suggestion of Venkatesan provides further evidence that the advantages of automation were previously recognized and understood in the prior art.

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Claims 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9-18 are considered allowable over the prior art of record.

Applicants have argued that Venkatesan does not disclose his shutter as being responsive to changes in the composition of the vapor cloud. It is noted, however, that the purpose of Venkatesan's charge probe 42 is to detect the portion of the lobe that contains the proper composition, particularly during the start-up phase of the process. See col. 7, lines 6- Also, Venkatesan's shutter is for use during the start-up phase (col. 7, lines 50-57), and is retracted when the process has been initialized and deposition is ready to proceed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

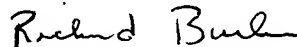
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Richard Bueker
Primary Examiner
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